

**PLASMA IMMERSION ION IMPLANTATION PROCESS USING A
CAPACITIVELY COUPLED PLASMA SOURCE HAVING LOW DISSOCIATION
AND LOW MINIMUM PLASMA VOLTAGE**

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ABSTRACT

A method for implanting ions in a surface layer of a workpiece includes placing the workpiece on a workpiece support in a chamber with the surface layer being in facing relationship with a ceiling of the chamber, thereby defining a processing zone between the workpiece and the ceiling, and introducing into the chamber a process gas including the species to be implanted in the surface layer of the workpiece. The method includes generating from the process gas a plasma by capacitively coupling RF source power across the workpiece support and the ceiling or the sidewall from an RF source power generator. The method further includes applying an RF bias from an RF bias generator to the workpiece support.

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